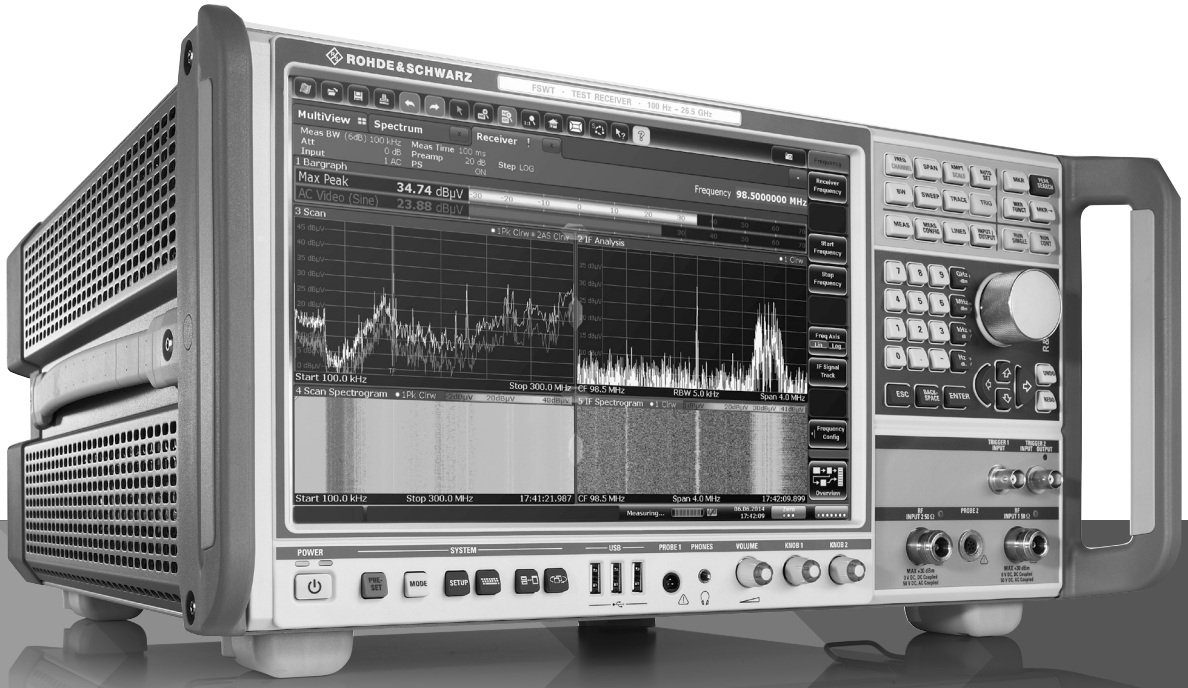
R&S®FSWT
TEST RECEIVER

Specifications



Specifications
Version 05.00

ROHDE&SCHWARZ
Make ideas real

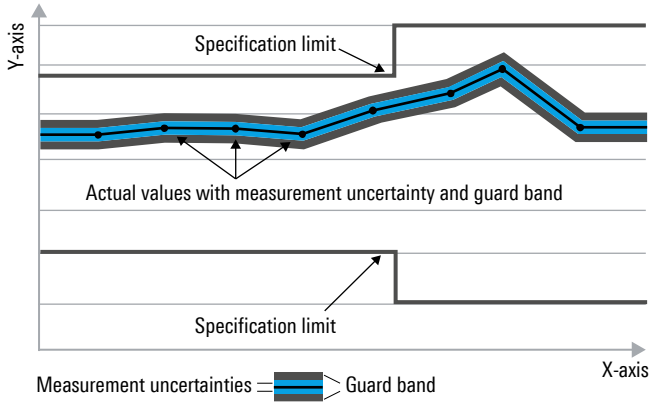
CONTENTS

Definitions

General
Product data applies under the following conditions:

- Three hours of storage at ambient temperature followed by 30 minutes of warm-up operation
- Specified environmental conditions met
- Recommended calibration interval adhered to
- All internal automatic adjustments performed, if applicable

Specifications with limits
Represent warranted product performance by means of a range of values for the specified parameter. These specifications are marked with limiting symbols such as <, ≤, >, ≥, ±, or descriptions such as maximum, limit of, minimum. Compliance is ensured by testing or is derived from the design. Test limits are narrowed by guard bands to take into account measurement uncertainties, drift and aging, if applicable.



Specifications without limits
Represent warranted product performance for the specified parameter. These specifications are not specially marked and represent values with no or negligible deviations from the given value (e.g. dimensions or resolution of a setting parameter). Compliance is ensured by design.

Typical data (typ.)
Characterizes product performance by means of representative information for the given parameter. When marked with <, > or as a range, it represents the performance met by approximately 80 % of the instruments at production time. Otherwise, it represents the mean value.

Nominal values (nom.)
Characterize product performance by means of a representative value for the given parameter (e.g. nominal impedance). In contrast to typical data, a statistical evaluation does not take place and the parameter is not tested during production.

Measured values (meas.)
Characterize expected product performance by means of measurement results gained from individual samples.

Uncertainties
Represent limits of measurement uncertainty for a given measurand. Uncertainty is defined with a coverage factor of 2 and has been calculated in line with the rules of the Guide to the Expression of Uncertainty in Measurement (GUM), taking into account environmental conditions, aging, wear and tear.

Device settings and GUI parameters are indicated as follows: “parameter: value”.

Typical data as well as nominal and measured values are not warranted by Rohde & Schwarz.

Specifications

The specifications below apply to the R&S®FSWT26 test receiver. The R&S®FSWT26 is equipped with a 500 MHz IF bandwidth, two selectable broadband IF/video/demodulation outputs and two RF inputs to support substitution measurements. An optional internal preselector and preamplifier are available to provide high selectivity and sensitivity. Due to its two operating modes, the R&S®FSWT26 can be used as a test receiver or as a spectrum analyzer.

RF input

Input	selectable	RF input 1, RF input 2
Impedance		50 Ω
Connector		N female
Coupling		AC, DC

Frequency

Frequency range	DC coupled	10 Hz to 26.5 GHz
	AC coupled	
	with R&S®FSWT-B23 or R&S®FSWT-B223 option	100 Hz to 26.5 GHz
	without R&S®FSWT-B23 or R&S®FSWT-B223 option	10 MHz to 26.5 GHz
Frequency resolution		0.01 Hz

Reference frequency, internal		
Accuracy		±(time since last adjustment × aging rate + temperature drift + calibration accuracy)
Aging per year	standard	$\pm 1 \times 10^{-7}$
	with R&S®FSW-B4 OCXO precision frequency reference option	$\pm 3 \times 10^{-8}$
Temperature drift (0 °C to +50 °C)	standard	$\pm 1 \times 10^{-7}$
	with R&S®FSW-B4 OCXO precision frequency reference option	$\pm 1 \times 10^{-9}$
Achievable initial calibration accuracy	standard	$\pm 1 \times 10^{-8}$
	with R&S®FSW-B4 OCXO precision frequency reference option	$\pm 5 \times 10^{-9}$

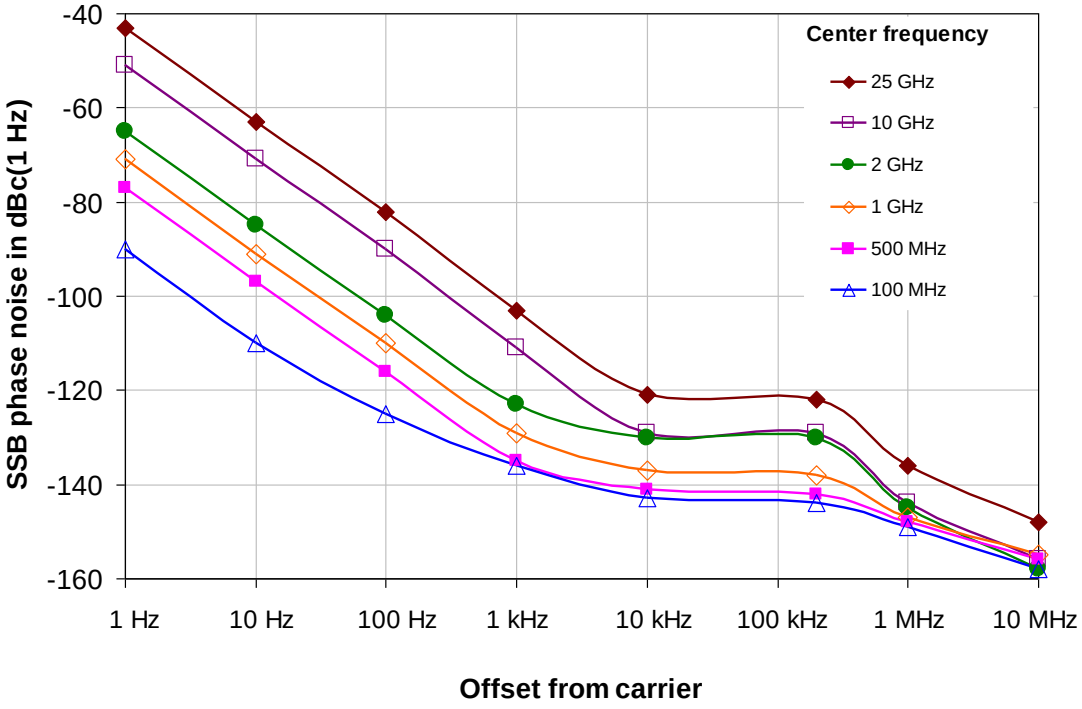
Frequency readout (analyzer mode)		
Marker resolution		1 Hz
Uncertainty		±(marker frequency × reference accuracy + 10 % × resolution bandwidth + ½ (span/(sweep points – 1)) + 1 Hz)
Number of sweep (trace) points	default value	1001
	range	
	span ≥ 10 Hz	101 to 100 001
	span = 0 Hz	101 to 1 000 001
Marker tuning frequency step size	marker step size = sweep points	span / (sweep points – 1)
	marker step size = standard	span / (default sweep points – 1)
Frequency counter resolution		0.001 Hz
Count accuracy		±(frequency × reference accuracy + ½ (last digit))
Display range for frequency axis		0 Hz, 10 Hz to max. frequency
Resolution		0.1 Hz
Maximum span deviation		±0.1 %

Receiver scan		
Scan		max. 100 subranges with different settings
Measurement time	normal scan, per frequency	50 µs to 100 s
	time domain scan, per subrange	50 µs to 100 s
Number of trace points		up to 4 000 000
Frequency step size	normal scan	min. 1 Hz
	time domain scan	0.25 × resolution bandwidth

Time domain scan (TDS)		
Maximum frequency segment processed in parallel	RBW = 200 Hz	0.65 MHz
	RBW = 9 kHz	29.49 MHz
	RBW = 120 kHz	49.1 MHz
	RBW = 1 MHz	51.2 MHz
FFT overlap factor	TDS optimization = dynamic	≥ 93 %

Spectrum analyzer		
Sweep time range	span = 0 Hz	1 µs to 16000 s
	span ≥ 10 Hz	3 µs to 16000 s [1]
Sweep time accuracy	span = 0 Hz, sweep points ≤ 10001	±0.1 % (nom.)
	span ≥ 10 Hz	±3 % (nom.)

Spectral purity		
SSB phase noise	frequency = 1000 MHz, carrier offset	
	10 Hz, without R&S®FSW-B4 option	–80 dBc (1 Hz) (nom.)
	10 Hz, with R&S®FSW-B4 option	–90 dBc (1 Hz) (nom.)
	100 Hz	< –100 dBc (1 Hz)
	1 kHz	< –125 dBc (1 Hz)
	10 kHz	< –134 dBc (1 Hz)
	100 kHz	< –136 dBc (1 Hz)
	1 MHz	< –145 dBc (1 Hz)
	10 MHz	–155 dBc (1 Hz) (nom.)
Residual FM	frequency = 1000 MHz, RBW = 1 kHz, sweep time = 100 ms	< 0.1 Hz (nom.)



Typical phase noise at different center frequencies (with the R&S®FSW-B4 option for offsets ≤ 10 Hz)

[1] The selected sweep time is the net data acquisition time (without the extra time needed for hardware settling or FFT processing).

RF preselector filters with R&S®FSWT-B223 option

Frequency range 10 Hz to 40 MHz		
Highpass filters		1 kHz, 10 kHz, 20 kHz, 50 kHz, 100 kHz, 200 kHz, 1 MHz, 5 MHz, bypass
Lowpass filters		20 kHz, 100 kHz, 500 kHz, 1 MHz, 5 MHz, 14 MHz, 40 MHz
Highpass and lowpass filters can be combined.		
Frequency range 30 MHz to 26.5 GHz		
Bandpass filters		30 MHz to 100 MHz, 100 MHz to 200 MHz, 200 MHz to 300 MHz, 300 MHz to 500 MHz, 500 MHz to 1 GHz, 1 GHz to 2 GHz, 30 MHz to 2.25 GHz, 2 GHz to 8 GHz
Highpass filter		8 GHz

IF filters

IF filters		
Bandwidths (–3 dB)		1 Hz to 50 MHz in 1/2/3/5 sequence, 80 MHz, 100 MHz, 200 MHz, 300 MHz, 500 MHz
Bandwidths (–6 dB)		1 Hz to 50 MHz in 1/2/3/5 sequence, 80 MHz, 100 MHz, 200 MHz, 300 MHz, 500 MHz
	additional EMI filters	9 kHz, 120 kHz
Bandwidth uncertainty	RBW ≤ 80 MHz	< 3 % (nom.)
	80 MHz < RBW ≤ 300 MHz	< 5 % (nom.)
	RBW = 500 MHz	< 7 % (nom.)
Selectivity		
Bandwidths (–3 dB)	60 dB:3 dB	< 5 (nom.)
Bandwidths (–6 dB)	60 dB:6 dB	< 4 (nom.)

Video bandwidths	RBW ≤ 80 MHz	1 Hz to 50 MHz in 1/2/3/5 sequence, 80 MHz
	RBW > 80 MHz	no video filter present in the signal path

Level

Display range		displayed noise floor up to +30 dBm

Maximum input level		
DC voltage	AC coupled	50 V
	DC coupled	0 V
CW RF power	RF attenuation = 0 dB	20 dBm (= 0.1 W)
	RF attenuation ≥ 10 dB	30 dBm (= 1 W)
Pulse spectral density	RF attenuation = 0 dB, RF preamplifier off	97 dBµV/MHz
Maximum pulse voltage	RF attenuation ≥ 10 dB	150 V
Maximum pulse energy	RF attenuation ≥ 10 dB, 10 µs	1 mWs

Intermodulation		
1 dB compression of input mixer (two-tone)	RF attenuation = 0 dB, RF preamplifier off	
	f_{in} ≤ 3 GHz	+15 dBm (nom.)
	3 GHz < f_{in} ≤ 8 GHz	+10 dBm (nom.)
	f_{in} > 8 GHz	+0 dBm (nom.)
	with R&S®FSWT-B23 or R&S®FSWT-B223 option, RF attenuation = 0 dB, RF preamplifier gain = 30 dB	
	f_{in} ≤ 3 GHz	–20 dBm (nom.)
	3 GHz < f_{in} ≤ 8 GHz	–25 dBm (nom.)
	f_{in} > 8 GHz	–35 dBm (nom.)
Third-order intercept point (TOI)	IF bandwidth ≤ 80 MHz, RF attenuation = 0 dB, level: 2 × –15 dBm, ∆f > 5 × RBW, YIG preselector on, RF preamplifier off	
	f_{in} < 10 MHz	28 dBm (nom.)
	10 MHz ≤ f_{in} < 1 GHz	> 25 dBm, typ. 30 dBm
	1 GHz ≤ f_{in} < 3 GHz	> 20 dBm, typ. 25 dBm [2]
	3 GHz ≤ f_{in} < 8 GHz	> 17 dBm, typ. 20 dBm
	f_{in} ≥ 8 GHz	> 10 dBm, typ. 15 dBm
	IF bandwidth > 80 MHz, RF attenuation = 0 dB, YIG preselector on, RF preamplifier off	
	f_{center} ≤ 8 GHz: level 2 × –20 dBm within IF bandwidth	12.5 dBm (nom.)
	f_{center} > 8 GHz: level 2 × –25 dBm within IF bandwidth	7.5 dBm (nom.)
Second-harmonic intercept point (SHI)	RF attenuation = 0 dB, level = –5 dBm, YIG preselector on, RF preamplifier off	
	1 MHz < f_{in} ≤ 350 MHz	> 50 dBm, typ. 62 dBm
	350 MHz < f_{in} ≤ 500 MHz	> 70 dBm, typ. 80 dBm
	500 MHz < f_{in} < 1.5 GHz [3]	> 47 dBm, typ. 52 dBm
	500 MHz < f_{in} < 1.5 GHz [4]	> 62 dBm, typ. 70 dBm
	1.5 GHz ≤ f_{in} ≤ 4 GHz	> 62 dBm, typ. 70 dBm
	4 GHz < f_{in} ≤ 13.5 GHz	65 dBm (nom.)

Displayed average noise level (DANL), RF preamplifier off		
Input 1	RF attenuation = 0 dB, termination = 50 Ω, normalized to 1 Hz RBW, trace average, average mode log, sample detector, +5 °C to +40 °C	
	10 Hz ≤ f ≤ 100 Hz	< –110 dBm, typ. –120 dBm
	100 Hz < f ≤ 1 kHz	< –120 dBm, typ. –130 dBm
	1 kHz < f < 9 kHz	< –135 dBm, typ. –147 dBm
	RF attenuation = 0 dB, termination = 50 Ω, log. scaling, normalized to 1 Hz RBW, RBW = 1 kHz, VBW = 1 Hz, +5 °C to +40 °C, f ≥ 8 GHz: YIG preselector on	
	9 kHz ≤ f ≤ 1 MHz	< –145 dBm, typ. –150 dBm
	1 MHz < f ≤ 1 GHz	< –148 dBm, typ. –153 dBm
	1 GHz < f < 3 GHz	< –150 dBm, typ. –155 dBm
	3 GHz ≤ f < 8 GHz	< –150 dBm, typ. –155 dBm
	8 GHz ≤ f < 13.6 GHz	< –149 dBm, typ. –154 dBm
	13.6 GHz ≤ f < 18 GHz	< –148 dBm, typ. –152 dBm
	18 GHz ≤ f < 25 GHz	< –145 dBm, typ. –149 dBm
	25 GHz ≤ f ≤ 26.5 GHz	< –138 dBm, typ. –142 dBm
Input 2	10 Hz ≤ f < 2 GHz	see specifications for input 1
	2 GHz ≤ f < 8 GHz	add 0.5 dB to the values specified for input 1
	8 GHz ≤ f ≤ 26.5 GHz	add 1 dB to the values specified for input 1

[2] With highpass filters for harmonic measurements off. With highpass filters for harmonic measurements on, the TOI degrades by 5 dB (nom.).

[3] With highpass filters for harmonic measurements off.

[4] With highpass filters for harmonic measurements on.

Spurious responses	YIG preselector on for f ≥ 8 GHz, mixer level ≤ –10 dBm [5], sweep type: auto, sweep optimization: auto or dynamic	
Image response	f_{in} – 2 × 8997 MHz (first IF)	< –90 dBc
	f_{in} – 2 × 1317 MHz (second IF)	< –90 dBc
	f_{in} – 2 × 37 MHz (third IF)	< –90 dBc
	f_{in} = external interfering signal frequency	
Intermediate frequency response	first IF (8997 MHz)	< –90 dBc
	second IF (1317 MHz)	< –90 dBc
	third IF (37 MHz)	< –90 dBc
	f_{in} = external interfering signal frequency	
Residual spurious response	IF bandwidth ≤ 80 MHz, RF attenuation = 0 dB	
	f ≤ 1 MHz	< –90 dBm
	1 MHz < f < 8900 MHz	< –110 dBm
	f ≥ 8900 MHz	< –100 dBm
	f = receive frequency	
	IF bandwidth > 80 MHz, RF attenuation = 0 dB	
	f_{center} ≥ 150 MHz, bandwidth ≤ 160 MHz, f_{center} ≥ 460 MHz, bandwidth ≤ 500 MHz	–90 dBm (nom.)
Local oscillators related spurious	f_{in} < 1 GHz	
	10 Hz ≤ offset from carrier < 200 Hz	< –90 dBc
	offset from carrier > 200 Hz	< –100 dBc
	f_{in} ≥ 1 GHz	
	10 Hz ≤ offset from carrier < 200 Hz	< –90 dBc + 20 log (f_{in}/GHz)
	offset from carrier > 200 Hz	< –100 dBc + 20 log (f_{in}/GHz)
	f = receive frequency	
ADC related spurious response	CW signal, reference level = signal level	
	IF bandwidth ≤ 100 kHz, mixer level = –30 dBm [5]	–100 dBc (nom.)
	100 kHz < IF bandwidth ≤ 80 MHz, mixer level = –30 dBm [5]	–80 dBc (nom.)
	IF bandwidth > 80 MHz, mixer level = –15 dBm [5]	
	f_{center} ≥ 150 MHz, IF bandwidth ≤ 160 MHz, f_{center} ≥ 460 MHz, IF bandwidth ≤ 500 MHz	–65 dBc (nom.)
Vibrational environmental stimuli	max. 0.21 g RMS	< –60 dBc + 20 log (f_{in}/GHz) (nom.)

Level display (analyzer mode)		
Logarithmic level axis		1 dB to 200 dB, in steps of 1/2/5
Linear level axis		10 % of reference level per level division, 10 divisions or logarithmic scaling
Number of traces		6
Trace detector		positive peak, negative peak, auto peak (normal), sample, RMS, average, quasi-peak, CISPR-average, RMS-average, AC video (pulse/sine)
Trace functions		clear/write, max. hold, min. hold, average, view
Setting range of reference level		–130 dBm to (–10 dBm + RF attenuation – RF preamplifier gain), in steps of 0.01 dB
Units of level axis	logarithmic level display	dBm, dBµV, dBmV, dBµA, dBpW
	linear level display	µV, mV, µA, mA, pW, nW

[5] Mixer level = signal level – RF attenuation + preamplifier gain.

Level display (receiver mode)		
Level display	analog	bargraph display, separately for each detector
	digital	numeric; 0.01 dB resolution
Detectors	max. 4 selectable	max. peak, min. peak, RMS, average, quasi-peak, CISPR-average, RMS-average, AC video (pulse/sine)
Units of level axis		dBm, dBµV, dBmV, dBµA, dBpW, dBpT
RF spectrum		
Logarithmic level axis		10 dB to 200 dB, in steps of 10
Frequency axis		linear or logarithmic
Number of traces		6
Detectors	normal scan	max. peak, min. peak, RMS, average, AC video

Level measurement uncertainty		
Absolute level uncertainty at 64 MHz	RBW = 10 kHz, level = –10 dBm, reference level = –10 dBm, RF attenuation = 10 dB, RF preselector off, RF preamplifier off	< 0.2 dB (σ = 0.07 dB)
Frequency response, referenced to 64 MHz, input 1	RF attenuation = 10 dB, 20 dB, 30 dB, 40 dB, RBW ≤ 10 MHz, RF preselector off, RF preamplifier off, f ≥ 8 GHz: YIG preselector on, +20 °C to +30 °C	
	10 Hz ≤ f < 9 kHz	< 1 dB (nom.)
	9 kHz ≤ f < 10 MHz	< 0.45 dB (σ = 0.17 dB)
	10 MHz ≤ f < 3.6 GHz	< 0.3 dB (σ = 0.10 dB)
	3.6 GHz ≤ f < 8 GHz	< 0.5 dB (σ = 0.17 dB)
	8 GHz ≤ f < 18 GHz, span < 1 GHz	< 1.5 dB (σ = 0.50 dB)
	18 GHz ≤ f ≤ 26.5 GHz, span < 1 GHz [6]	< 2 dB (σ = 0.67 dB)
	any RF attenuation, RBW ≤ 10 MHz, RF preselector off, RF preamplifier off, f ≥ 8 GHz: YIG preselector on, +15 °C to +40 °C	
	10 Hz ≤ f < 9 kHz	< 1 dB (nom.)
	9 kHz ≤ f < 3.6 GHz	< 0.6 dB (σ = 0.20 dB)
	3.6 GHz ≤ f < 8 GHz	< 0.8 dB (σ = 0.27 dB)
	8 GHz ≤ f < 18 GHz, span < 1 GHz	< 2 dB (σ = 0.67 dB)
	18 GHz ≤ f ≤ 26.5 GHz, span < 1 GHz 6	< 2.5 dB (σ = 0.83 dB)
	RF attenuation ≤ 20 dB, RBW ≤ 10 MHz, RF preamplifier gain = 0/10/20/30 dB, RF preselector on or off, f ≥ 8 GHz: YIG preselector on, +20 °C to +30 °C	
	100 Hz ≤ f < 3.6 GHz	< 1.2 dB (σ = 0.4 dB)
	3.6 GHz ≤ f < 8 GHz	< 1.5 dB (σ = 0.5 dB)
	8 GHz ≤ f < 18 GHz, span < 1 GHz	< 2.5 dB (σ = 0.83 dB)
	18 GHz ≤ f ≤ 26.5 GHz, span < 1 GHz [6]	< 3 dB (σ = 1.00 dB)
Frequency response, referenced to 64 MHz, input 2	add 0.4 dB to the above values	
Attenuator switching uncertainty	f = 64 MHz [7], 0 dB to 70 dB, referenced to 10 dB attenuation	< 0.2 dB (σ = 0.07 dB)
Uncertainty of reference level setting	input mixer level ≤ –15 dBm	0 dB [8]
	input mixer level > –15 dBm	< 0.1 dB (nom.)
IF bandwidth switching uncertainty	referenced to bandwidth = 10 kHz	
	bandwidth ≤ 10 MHz	< 0.1 dB (σ = 0.04 dB)
	bandwidth > 10 MHz	< 0.5 dB (σ = 0.13 dB)

[6] For signal frequencies up to 18 GHz, the N-type connector of the R&S®FSWT is used. For frequencies > 18 GHz, the specification is based on the use of an N (m) to 3.5 mm (f), APC 3.5 compatible adapter, Rohde & Schwarz order number: 3587.7835.00.

[7] f = 10 MHz with R&S®FSWT-B23 or R&S®FSWT-B223 option, RF preamplifier on or RF preselector on.

[8] The reference level setting affects only the graphical representation of the measurement result on the display, not the measurement itself. The reference level setting causes no additional uncertainty in measurement results.

Nonlinearity of displayed level		
Logarithmic level display	IF bandwidth ≤ 80 MHz	
	S/N > 16 dB, 0 dB ≤ level ≤ –70 dB	< 0.1 dB (σ = 0.04 dB)
	S/N > 16 dB, –70 dB < level ≤ –90 dB	< 0.2 dB (σ = 0.08 dB)
	IF bandwidth > 80 MHz	
	S/N > 16 dB, 0 dB ≤ level ≤ –70 dB	< 0.15 dB (nom.)
Linear level display	S/N > 16 dB, 0 dB to –70 dB	< 5 % of reference level (nom.)

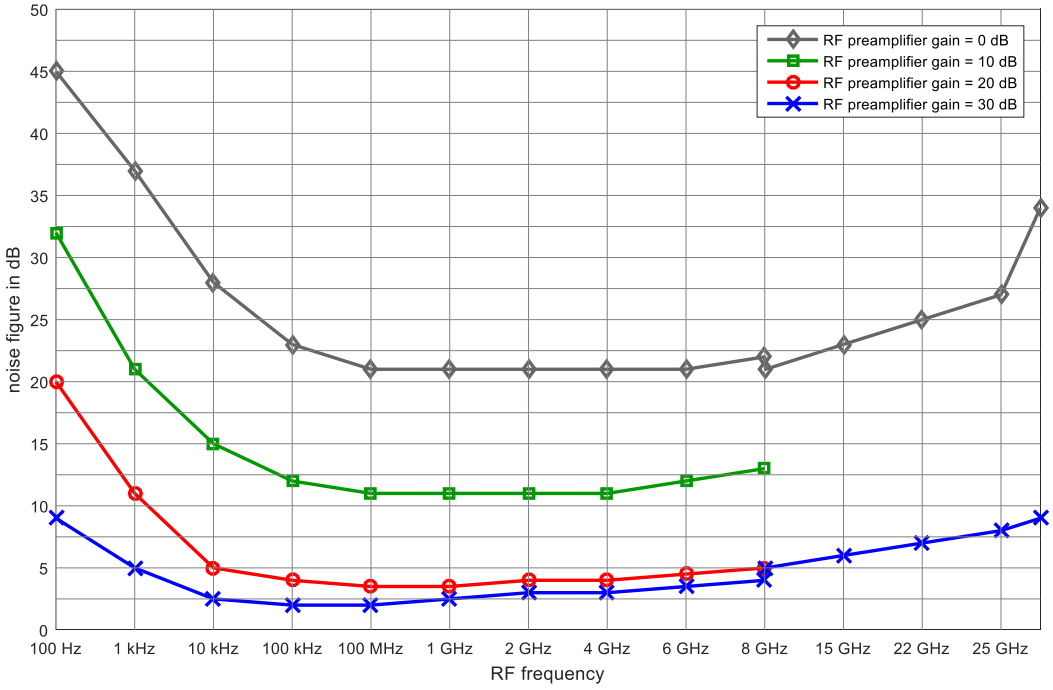
Total measurement uncertainty		
Input 1, YIG preselector on	signal level = 0 dB to –70 dB below reference level, S/N > 20 dB, RBW < 10 MHz, sweep time = auto, RF attenuation = 10 dB, 20 dB, 30 dB, 40 dB, RF preselector and RF preamplifier off, span/RBW < 100, 95 % confidence level, +20 °C to +30 °C	
	9 kHz ≤ f < 10 MHz	±0.37 dB
	10 MHz ≤ f < 3.6 GHz	±0.27 dB
	3.6 GHz ≤ f < 8 GHz	±0.37 dB
	8 GHz ≤ f < 18 GHz	±1.4 dB
	18 GHz ≤ f ≤ 26.5 GHz	±1.7 dB
Input 2, YIG preselector on	signal level = 0 dB to –70 dB below reference level, S/N > 20 dB, RBW < 10 MHz, sweep time: auto, RF attenuation = 10 dB, 20 dB, 30 dB, 40 dB, RF preselector and RF preamplifier: off, span/RBW < 100, 95 % confidence level, +20 °C to +30 °C	
	9 kHz ≤ f < 10 MHz	±0.6 dB
	10 MHz ≤ f < 3.6 GHz	±0.51 dB
	3.6 GHz ≤ f < 8 GHz	±0.63 dB
	8 GHz ≤ f < 18 GHz	±1.7 dB
	18 GHz ≤ f ≤ 26.5 GHz	±2.0 dB

RF preamplifier with R&S®FSWT-B23 or R&S®FSWT-B223 option

Frequency range		100 Hz to 26.5 GHz
RF preamplifier gain	100 Hz to 8 GHz	0/10/20/30 dB (nom.)
	8 GHz to 26.5 GHz	0 dB/30 dB (nom.)

Noise indication		
Input 1	RF preamplifier gain = 30 dB, RF attenuation = 0 dB, termination = 50 Ω, RMS detector, RBW ≤ 10 kHz, normalized to 1 Hz noise bandwidth, +20 °C to +30 °C, f ≥ 8 GHz: YIG preselector on	
	100 Hz ≤ f < 1 kHz	< –159 dBm
	1 kHz ≤ f < 10 kHz	< –166 dBm
	10 kHz ≤ f < 1 GHz	< –170 dBm
	1 GHz ≤ f < 4 GHz	< –169 dBm
	4 GHz ≤ f < 8 GHz	< –168 dBm
	8 GHz ≤ f < 15 GHz	< –165 dBm
	15 GHz ≤ f < 22 GHz	< –164 dBm
	22 GHz ≤ f ≤ 26.5 GHz	< –162 dBm
Input 2	100 Hz ≤ f < 2 GHz	see specifications for input 1
	2 GHz ≤ f < 8 GHz	add 0.5 dB to the values specified for input 1
	8 GHz ≤ f ≤ 26.5 GHz	add 1 dB to the values specified for input 1

Noise figure				
Input 1	The values below are calculated based on the sensitivity specification.			
	frequency range	gain = 10 dB	gain = 20 dB	gain = 30 dB
	100 Hz ≤ f < 1 kHz	< 35 dB	< 25 dB	< 15 dB
	1 kHz ≤ f < 10 kHz	< 25 dB	< 15 dB	< 8 dB
	10 kHz ≤ f < 1 GHz	< 18 dB	< 7 dB	< 4 dB
	1 GHz ≤ f < 4 GHz	< 18 dB	< 8 dB	< 5 dB
	4 GHz ≤ f < 8 GHz	< 19 dB	< 9 dB	< 6 dB
	8 GHz ≤ f < 15 GHz	–	–	< 9 dB
	15 GHz ≤ f < 22 GHz	–	–	< 10 dB
	22 GHz ≤ f ≤ 26.5 GHz	–	–	< 12 dB
Input 2	100 Hz ≤ f < 2 GHz	see specifications for input 1		
	2 GHz ≤ f < 8 GHz	add 0.5 dB to the values specified for input 1		
	8 GHz ≤ f ≤ 26.5 GHz	add 1 dB to the values specified for input 1		



Typical noise figure with R&S®FSWT-B23 or R&S®FSWT-B223 option, RF preamplifier on

Trigger functions

Trigger		
Trigger source	analyzer mode	free run, video, external, IF power, RF power
	I/Q analyzer	free run, external, IF power, RF power, I/Q power
	receiver mode	free run, external
Trigger offset	analyzer mode	
	span ≥ 10 Hz	5 ns to 20 s
	span = 0 Hz	(–sweep time) to 20 s
Minimum trigger offset resolution	analyzer mode	
	span > 0 Hz	5 ns
	span = 0 Hz, trigger offset > 0	5 ns
	span = 0 Hz, trigger offset < 0	sweep time/number of sweep points
Maximum deviation of trigger offset		5 ns
IF power trigger		
Sensitivity	min. signal power	
	set IF bandwidth/analysis bandwidth ≤ 80 MHz	–60 dBm + RF attenuation – RF preamplifier gain (nom.)
	set IF bandwidth/analysis bandwidth > 80 MHz	–30 dBm + RF attenuation – RF preamplifier gain (nom.)
	max. signal power	–10 dBm + RF attenuation – RF preamplifier gain (nom.)
IF power trigger bandwidth	RBW > 500 kHz	20 MHz (nom.) [9]
	RBW ≤ 500 kHz, FFT	20 MHz (nom.)
	RBW ≤ 500 kHz, swept	6 MHz (nom.)
RF power trigger (analyzer mode)		
Sensitivity	min. signal power	–30 dBm + RF attenuation – RF preamplifier gain (nom.)
	max. signal power	+10 dBm + RF attenuation – RF preamplifier gain (nom.)
RF power trigger frequency range	f ≤ 8 GHz	8 GHz (nom.)
	f > 8 GHz	f_{center} ± 250 MHz (nom.)
Gated sweep (analyzer mode)		
Gate source		video, external, IF power, RF power
Gate delay		5 ns to 20 s, min. resolution 5 ns
Gate length		5 ns to 20 s, min. resolution 5 ns
Maximum deviation of gate length		±5 ns

[9] Sweep optimization = auto.

Analog modulation analyzer

The specifications of the analog modulation analyzer operating mode are based on the specifications of the spectrum analyzer mode. Therefore, unless otherwise noted, these specifications also apply for the analog modulation analyzer mode.

Measurement of analog modulation signals		
Demodulation bandwidth		100/200/300/400/500/800 Hz
		1/1.6/2/3/3.2/5/6.4/10 kHz
		12.5/20/25/30/50 kHz
		100/200/300/400/500/800 kHz
		1/1.6/2/3/5/8/10 MHz
		18/20/28/30/40/50/80 MHz
		100/160/200/300/320/500 MHz
Recording length	maximum	24 Msample
Recording time	demodulation bandwidth	
	100 Hz	192000 s
	6.4 kHz	3000 s
	12.5 kHz	1536 s
	1.6 MHz	12 s
	3 MHz	6.24 s
	5 MHz	3.84 s
	8 MHz	2.4 s
	10 MHz	1.92 s
	20 MHz, 40 MHz	480 ms
	80 MHz	240 ms
	100 MHz	160 ms
	200 MHz	80 ms
	300 MHz, 500 MHz	40 ms
Display	frequency versus time (FM), amplitude versus time (AM), phase versus time (φM), RF power versus time, RF spectrum (FFT), AF spectrum (FFT), table with numeric values for: modulation deviation (peak, RMS), modulation frequency, carrier offset, carrier power (power of unmodulated carrier), THD, SINAD	

AF (modulation frequency)		
Range		max. 0.5 × demodulation bandwidth
Resolution		5 digits
Measurement uncertainty		0.1 %
AF filters		
Lowpass	demodulation bandwidth ≤ 3 MHz	3 kHz
	demodulation bandwidth ≤ 8 MHz	15 kHz, 23 kHz, 150 kHz
		5 %, 10 %, 25 % of demodulation bandwidth
Highpass	demodulation bandwidth ≤ 1.6 MHz	20 Hz
	demodulation bandwidth ≤ 3 MHz	50 Hz
	demodulation bandwidth ≤ 8 MHz	300 Hz
Deemphasis		25 µs, 50 µs, 75 µs, 750 µs
Weighting filters	demodulation bandwidth ≤ 3 MHz	ITU-T P.53
	demodulation bandwidth ≤ 1.6 MHz	ITU-R unweighted
	demodulation bandwidth ≤ 3 MHz	ITU-R weighted
	demodulation bandwidth ≤ 800 kHz	A weighted

AM demodulation		
Measurement range	modulation depth	0 % to 100 %
Modulation depth uncertainty	AF ≤ 1 MHz	±(0.2 % + 0.001 × measured value)
Residual AM	demodulation bandwidth ≤ 200 kHz, RMS, RF ≤ 8 GHz, RF input level ≥ (RF attenuation/dB – 30) dBm	0.03 %
Harmonic distortion	10 Hz ≤ AF ≤ 1 MHz	0.05 %
FM rejection	AF ≤ 1 MHz, deviation ≤ 1 MHz and AF + deviation ≤ 0.3 × demodulation bandwidth	1 % + residual AM

FM demodulation		
Measurement range	frequency deviation	max. 0.5 × demodulation bandwidth
Deviation uncertainty	AF ≤ 1 MHz, demodulation bandwidth ≥ 3.3 × (AF + deviation), demodulation bandwidth ≤ 10 × (AF + deviation)	±(0.003 × (AF + deviation) + 2 Hz)
Residual FM	demodulation bandwidth ≤ 100 kHz, RMS, RF ≤ 8 GHz, RF input level ≥ (RF attenuation/dB – 30) dBm	10 Hz
Harmonic distortion	10 Hz ≤ AF ≤ 1 MHz, deviation ≤ 500 kHz	0.1 %
AM rejection	100 Hz ≤ AF ≤ 1 kHz, 50 % modulation depth	30 Hz + residual FM

φM demodulation		
Measurement range	phase deviation	5000 rad, max. 0.5 × demodulation bandwidth/AF
Phase deviation uncertainty	AF ≤ 1 MHz and AF × (phase deviation + 1) ≤ 0.3 × demodulation bandwidth	±(0.002 rad + 0.002 × measured value)
Residual φM	demodulation bandwidth ≤ 100 kHz, RMS, RF ≤ 1 GHz, 300 Hz highpass, RF input level ≥ (RF attenuation/dB – 30) dBm	0.3 mrad

Carrier power versus time		
Display range		noise floor to +30 dBm
Measurement uncertainty	unmodulated carrier, S/N > 16 dB, RF from 9 kHz to 8 GHz	1 dB
Maximum dynamic range	demodulation bandwidth 200 kHz, RF input level ≥ (RF attenuation/dB – 10) dBm	90 dB
Display linearity	S/N > 16 dB	0.1 dB

AF spectrum		
Span		max. 0.5 × demodulation bandwidth
Resolution bandwidth		1 Hz to 10 MHz

RF spectrum		
Span		max. 0.5 × demodulation bandwidth
Resolution bandwidth		1 Hz to 10 MHz
Shape factor	60 dB:3 dB	2.5 (nom.)

Modulation distortion		
Measurement functions		THD, SINAD
Measurement range		–100 dB to 0 dB
Resolution		0.01 dB
Measurement uncertainty		0.5 dB
AF frequency range		10 Hz to 5 MHz

Trigger		
Trigger functions		RF level, AM, FM, φM demodulation

I/Q data

Record length		max. 400 Msample I and Q
Word length of I/Q samples	sampling rate > 100 MHz or number of samples > 300 Msample	18 bit
	otherwise	24 bit
Sampling rate		100 Hz to 1.2 GHz
Maximum signal analysis bandwidth		500 MHz (nom.)

Signal analysis bandwidth ≤ 80 MHz		
Amplitude flatness	(1.25 × signal analysis bandwidth) ≤ f_{center} < 8 GHz	±0.3 dB (nom.)
	f_{center} ≥ 8 GHz	±3 dB (nom.)
Level display nonlinearity		see Nonlinearity of displayed level
Level measurement uncertainty		see Total measurement uncertainty
Third-order intermodulation distortion		see Third-order intercept point (TOI)
ADC related spurious response	mixer level = –30 dBm [10]	
	analysis bandwidth < 17 MHz	–100 dBc (nom.)
	17 MHz ≤ analysis bandwidth < 80 MHz	–80 dBc (nom.)
Other spurious responses		see Spurious responses
Signal analysis bandwidth 80 MHz to 500 MHz		
Amplitude flatness	RF attenuation = 10 dB, 20 dB, 30 dB, 40 dB, RF preamplifier off, RF preselector off	
	150 MHz ≤ f_{center} < 4 GHz and analysis bandwidth ≤ 160 MHz, 460 MHz ≤ f_{center} < 4 GHz and analysis bandwidth ≤ 500 MHz	±0.7 dB (nom.)
	4 GHz ≤ f_{center} ≤ 8 GHz [11] analysis bandwidth ≤ 500 MHz	±1.0 dB (nom.)
	8 GHz < f_{center} ≤ 26.5 GHz analysis bandwidth ≤ 500 MHz	+3 dB/–7 dB (nom.)
Level display nonlinearity	0 dB to –70 dB	< 0.15 dB (nom.)
Level measurement uncertainty at center frequency		add 0.2 dB (nom.) to the values in Total measurement uncertainty
Third-order intermodulation distortion	f_{center} ≤ 8 GHz: two –20 dBm tones at input mixer within analysis bandwidth [10], f_{center} > 8 GHz: two –25 dBm tones at input mixer within analysis bandwidth [10], reference level = signal level + 6 dB	–65 dBc (nom.)
Residual spurious response	RF attenuation = 0 dB, f_{center} ≥ 150 MHz, bandwidth ≤ 160 MHz, f_{center} ≥ 460 MHz, bandwidth ≤ 500 MHz	–90 dBm (nom.)
ADC related spurious response	single tone within analysis bandwidth, mixer level = –15 dBm [10], reference level = signal level, f_{center} ≥ 150 MHz, bandwidth ≤ 160 MHz, f_{center} ≥ 460 MHz, bandwidth ≤ 500 MHz	–65 dBc (nom.)
Other spurious responses		see Spurious responses

[10] Level of a tone at the input mixer (also abbreviated as mixer level) = signal level – RF attenuation + preamplifier gain.

[11] To obtain the set analysis bandwidth, (f_{center} + ½ analysis bandwidth) ≤ 8 GHz must be met.

Inputs and outputs

RF input 1		
Impedance		50 Ω
Connector		N female
VSWR	RF attenuation ≤ 4 dB, RF preamplifier off	
	10 MHz ≤ f ≤ 26.5 GHz	typ. 2.0 [12]
	RF attenuation ≤ 4 dB, RF preamplifier on	
	10 kHz ≤ f < 2 GHz	< 1.8, typ. 1.5 [12]
	2 GHz ≤ f < 8 GHz	< 2.2, typ. 1.9 [12]
	8 GHz ≤ f < 18 GHz	< 2.4, typ. 1.8 [12]
	18 GHz ≤ f ≤ 26.5 GHz	< 3.0, typ. 2.2 [12]
	5 dB ≤ RF attenuation ≤ 9 dB, any RF preamplifier setting	
	10 MHz ≤ f < 3.5 GHz	< 1.5, typ. 1.24 [12]
	3.5 GHz ≤ f < 8 GHz	< 1.8, typ. 1.26 [12]
	8 GHz ≤ f < 18 GHz	< 1.8, typ. 1.39 [12]
	18 GHz ≤ f ≤ 26.5 GHz	< 2.3, typ. 1.60 [12]
	RF attenuation ≥ 10 dB, any RF preamplifier setting	
	10 MHz ≤ f < 3.5 GHz	< 1.2, typ. 1.12 [12]
	3.5 GHz ≤ f < 8 GHz	< 1.5, typ. 1.19 [12]
	8 GHz ≤ f < 18 GHz	< 1.5, typ. 1.25 [12]
	18 GHz ≤ f ≤ 26.5 GHz	< 2.3, typ. 1.40 [12]
Setting range of attenuator		0 dB to 79 dB, in 1 dB steps [13]

RF input 2		
Impedance		50 Ω
Connector		N female
VSWR	f < 8 GHz	add 0.1 to the values specified for RF input 1
	8 GHz ≤ f < 26.5 GHz	add 0.2 to the values specified for RF input 1
Setting range of attenuator		0 dB to 79 dB, in 1 dB steps [13]

Probe power supply		
Supply voltages, selectable	probe 1: 3-pin connector	+15 V DC, –12.6 V DC and ground, max. 150 mA (nom.)
	probe 2: 5-pin connector	±10 V DC and ground, max. 100 mA (nom.)

USB interface		7 ports, type A plug, version 2.0

AF output		
Connector		3.5 mm mini-jack
Output impedance		32 Ω (nom.)
Open-circuit voltage		up to 1.5 V, adjustable [14]

External trigger/gate		
Number of ports		1 × input, 1 × input/output, selectable
Connector		BNC female
Trigger input voltage		0.5 V to 3.5 V (nom.)
Trigger output voltage		TTL-compatible, 0 V/5 V (nom.)
Impedance		10 kΩ (nom.)

[12] Typical VSWR performance: performance expected to be met in 95 % of the cases with a confidence level of 95 %, temperature range from +20 °C to +30 °C, input set to “DC coupling”. These values are not warranted and are subject to modification if a significant change in the statistical behavior of production instruments is observed.

[13] Base unit: mechanical RF attenuator: 5 dB steps; electronic IF attenuator: 1 dB steps.
With R&S®FSW-B23 or R&S®FSW-B223 option, RF preamplifier on or RF preselector on, f < 30 MHz: mechanical RF attenuator with 1 dB steps.

[14] The maximum volume at the AF output can be limited to a user defined value.

Reference input 1 MHz to 20 MHz		
Connector		BNC female
Impedance		50 Ω (nom.)
Input frequency range		1 MHz ≤ f_{in} ≤ 20 MHz, in 1 Hz steps
Required level		> 0 dBm

Reference input 100 MHz		
Connector		SMA female
Impedance		50 Ω (nom.)
Input frequency range		100 MHz
Required level		0 dBm to 10 dBm

Reference output 10 MHz		
Connector		BNC female
Impedance		50 Ω (nom.)
Output frequency		10 MHz
Level		10 dBm (nom.)

Reference output 1 MHz to 20 MHz		
Connector		BNC female
Impedance		50 Ω (nom.)
Output frequency	internal reference	not active
	external reference	same as reference input signal
Level		same as reference input signal

Reference output 100 MHz		
Connector		SMA female
Impedance		50 Ω (nom.)
Output frequency		100 MHz
Level		6 dBm (nom.)

Reference output 640 MHz		
Connector		SMA female
Impedance		50 Ω (nom.)
Output frequency		640 MHz
Level		16 dBm (nom.)

IF/video/demod output 1/output 2		
Connector		BNC female, 50 Ω (nom.)
Output signals	individually selectable for each output	IF, video, AM demod, FM demod, φM demod
	additionally using both outputs	I and Q
IF out		
Bandwidth		equal to RBW setting, max. 200 MHz
IF frequency		(RBW/2) to (240 MHz – RBW/2)
Output level	f_{center} > 10 MHz, span = 0 Hz or I/Q analyzer on, signal at reference level and center frequency	0 dBm (nom.)
Video output		
Bandwidth		equal to VBW setting, max. RBW/2
Output scaling		linear, logarithmic
Output coupling	linear scaling	DC, AC
	logarithmic scaling	DC
Output level	f_{center} > 10 MHz, span = 0 Hz, signal at reference level and center frequency	
	DC coupled	max. 3 V at 50 Ω load (nom.)
	AC coupled	max. ±1.5 V at 50 Ω load (nom.)
Output gain setting range	AC coupled	–20 to 100 dB
AM/FM/φM demod output		
Bandwidth		equal to RBW setting
Output level		max. ±1.5 V at 50 Ω load (nom.)

IF wide output		
Connector		BNC female, 50 Ω (nom.)
IF frequency	f_{center} ≥ 200 MHz	50 MHz to 550 MHz (nom.)
Maximum bandwidth (–6 dB)		500 MHz
Output level	RF attenuation auto, reference level ≥ –15 dBm, signal level = reference level	–20 dBm (nom.)

Aux port		
Connector		9-pin D-Sub male
Output		TTL-compatible, 0 V/5 V (nom.), max. 15 mA (nom.)
Input		TTL-compatible, max. 5 V (nom.)

IEC/IEEE bus control		interface in line with IEC 625-2 (IEEE 488.2)
Command set		SCPI 1997.0
Connector		24-pin Amphenol female
Interface functions		SH1, AH1, T6, L4, SR1, RL1, PP1, DC1, DT1, C0

LAN interface		10/100/1000BASE-T
Connector		RJ-45

External monitor		
Connector		DVI-D, DisplayPort Rev 1.1

Synchronization input		
Connector		HDMI™

Synchronization output		
Connector		HDMI™

General data

Display		30.7 cm (12.1") WXGA color touchscreen
Resolution		1280 × 800 pixel (WXGA resolution)
Pixel failure rate		< 1 × 10^{-5}

Data storage		
Internal	standard	solid state disk ≥ 400 Gbyte
External		supports USB 2.0 compatible memory devices

Temperature		
Temperature	operating temperature range	+5 °C to +50 °C
	permissible temperature range	0 °C to +55 °C
	storage temperature range	–40 °C to +70 °C
Climatic loading		+40 °C at 90 % rel. humidity, in line with EN 60068-2-30, without condensation

Mechanical resistance		
Vibration	sinusoidal	5 Hz to 55 Hz, displacement: 0.15 mm constant amplitude (1.8 g at 55 Hz); 55 Hz to 150 Hz, acceleration: 0.5 g constant, in line with EN 60068-2-6
	random	8 Hz to 500 Hz, acceleration: 1.2 g (RMS), in line with EN 60068-2-64
Shock		40 g shock spectrum, in line with MIL-STD-810E, method 516.4, procedure I, MIL-PRF-28800F, class 3

EMC		• IEC/EN 61326-1 [15, 16] • IEC/EN 61326-2-1 • CISPR 11/EN 55011 [15] • IEC/EN 61000-3-2 • IEC/EN 61000-3-3

Recommended calibration interval		1 year

Power supply		
AC input voltage range		100 V to 240 V
AC supply frequency		50 Hz to 60 Hz/400 Hz
Maximum input current		7.3 A (100 V) to 4.6 A (240 V)
Power consumption	without options	280 W
	with all options	350 W (meas.)
Safety		in line with IEC 61010-1, EN 61010-1, UL 61010-1, CAN/CSA-C22.2 No. 61010-1-04
Test marks		VDE, CE, $_{C}$CSA$_{US}$

Dimensions and weight		
Dimensions	W × H × D, including front handles and rear feet	462 mm × 240 mm × 504 mm (18.15 in × 9.44 in × 19.81 in) (nom.)
Net weight without options		24 kg (52.9 lb) (nom.)
Net weight fully equipped		27 kg (59.5 lb) (nom.)

[15] Emission limits for class B equipment.

[16] Immunity test requirement for industrial environment (EN 61326 table 2).

Options

R&S®FSW-B10 external generator control

Interface		
IEC/IEEE bus control		24-pin Amphenol female
Aux control		9-pin D-Sub female

Supported signal generators		R&S®SGS100A, R&S®SGT100A, R&S®SMA100A, R&S®SMA100B, R&S®SMB100A, R&S®SMB100B, R&S®SMBV100A, R&S®SMBV100B, R&S®SMC100A, R&S®SMCV100B, R&S®SME, R&S®SMF100A, R&S®SMG, R&S®SMGL, R&S®SMGU, R&S®SMH, R&S®SMHU, R&S®SMIQ, R&S®SMJ100A, R&S®SML, R&S®SMM100A, R&S®SMP, R&S®SMR, R&S®SMT, R&S®SMU200A, R&S®SMV03, R&S®SMW200A, R&S®SMX, R&S®SMY

R&S®FSWT-B17 digital baseband interface

I/Q data IN		
Interface		LVDS
	connector	26-pin female MDR (Mini D Ribbon)
Transfer protocol		Rohde & Schwarz digital I/Q interface [17]
User data	sample rate	100 sample/s to 100 Msample/s (nom.)
	resolution	18 bit for I and 18 bit for Q
	general purpose signals	2 bit

I/Q data OUT		
Interface		LVDS
	connector	26-pin female MDR (Mini D Ribbon)
Transfer protocol		Rohde & Schwarz digital I/Q interface [17]
User data	sample rate	100 sample/s to 200 Msample/s (nom.)
	resolution	18 bit for I and 18 bit for Q
Maximum I/Q bandwidth		80 MHz

R&S®FSWT-B517 DIG IQ 40G streaming out interface

Interface	direction	I/Q data out
	connector	QSFP+
	transfer data rate	40 Gbps
Output channel		16 bit, 600 Msample/s
User data	sample rate	100.1 Msample/s to 600 Msample/s (nom.)
	resolution	16 bit for I and 16 bit for Q
Minimum I/Q bandwidth		80 MHz
Maximum I/Q bandwidth		500 MHz

[17] Rohde & Schwarz digital I/Q interface is a Rohde & Schwarz company standard for the transmission of digital I/Q data.
It is supported by a wide range of instruments (signal generators, signal analyzers, communications testers and the R&S®EX-IQ-Box).

R&S®FSWT-K57 video rastering

The R&S®FSWT-K57 option is an application for graphical display of rastered video signals.

Trigger		
Trigger functions	free run, external, time	
Application features		
Image locking	allows automatic correlation between video frames for a stable display of the video frame	
Image stabilization	improves the image quality by correlating and aligning each line of the frame	
Measurement parameters		
Image averaging		max. 1000 images
Line rate		max. 10 MHz
Lines per frame		max. 5000 lines/frame

Ordering information

Designation	Type	Order No.
Test receiver, 10 Hz to 26.5 GHz	R&S®FSWT26	1313.7008.26
Accessories supplied		
Power cable, quick start guide and CD-ROM (with operating manual and service manual), N (m) to 3.5 mm (f), APC 3.5 compatible adapter		

Options

Designation	Type	Order No.	Retrofittable	Remarks
Hardware				
OCXO precision frequency reference	R&S®FSW-B4	1313.0703.02	yes	user-retrofittable
External generator control	R&S®FSW-B10	1313.1622.02	yes	contact service center
Digital baseband interface	R&S®FSWT-B17	1325.2470.02	yes	user-retrofittable
Spare solid state drive (removable hard drive)	R&S®FSWT-B18	1322.9874.21	yes	user-retrofittable
RF preamplifier, 100 Hz to 26.5 GHz	R&S®FSWT-B23	1321.6113.26	no	
RF preamplifier upgradeable, 100 Hz to 26.5 GHz	R&S®FSWT-B23E	1338.7201.02	no	includes R&S®FSWT-B23 option, for later upgrade of RF preselector option
RF preselector and RF preamplifier, 100 Hz to 26.5 GHz	R&S®FSWT-B223	1321.6142.26	no	includes R&S®FSWT-B23 option
RF preselector upgrade	R&S®FSWT-U223	1338.7218.02	yes	R&S®FSWT-B23E required; provides functionality of R&S®FSWT-B223
DIG IQ 40G streaming out interface	R&S®FSWT-B517	1338.6305.02	yes	user-retrofittable
USB mass memory write protection, pre-installed ex factory	R&S®FSW-B33	1313.3602.02	no	
Firmware				
Security write protection of solid state drive	R&S®FSWT-K33	1325.2487.02	yes	
Video rastering	R&S®FSWT-K57	1338.4725.02	yes	
Time domain scan	R&S®FSWT-K53	1338.6292.02	yes	
External frontend control	R&S®FSWT-K553	1353.3449.02	yes	support of R&S®FE44S
Vector signal analysis	R&S®FSWT-K70	1338.7560.02	yes	
Multi-modulation analysis	R&S®FSWT-K70M	1350.5970.02	yes	R&S®FSWT-K70 option required
BER PRBS measurements	R&S®FSWT-K70P	1350.5986.02	yes	R&S®FSWT-K70 option required
OFDM vector signal analysis	R&S®FSWT-K96	1338.7576.02	yes	

PC software

Designation	Type	Order No.
R&S®VSE basic edition [18, 19]	R&S®VSE	1345.1011.06 [20]
R&S®VSE enterprise edition [21]	R&S®VSE	1345.1105.06 [20]
License dongles		
License dongle	R&S®FSPC	1310.0002.03
Floating license dongle	R&S®FSPC-FL	1310.0002.04
Service option		
R&S®VSE software maintenance	R&S®VSE-SWM	1320.7622.81

For further information on the R&S®VSE vector signal explorer software, refer to specifications (PD 3607.1371.22) and product brochure (PD 3607.1371.12).

[18] R&S®FSPC required.

[19] Not available for R&S®FSPC-FL.

[20] To obtain the floating license of the product, R&S®FSPC-FL is required and order number xxxx.xxxx.51 must be used instead of xxxx.xxxx.06.

[21] R&S®FSPC or R&S®FSPC-FL required.

Recommended extras

Designation	Type	Order No.
Headphones		0708.9010.00
IEC/IEEE bus cable, length: 1 m	R&S®PCK	0292.2013.10
IEC/IEEE bus cable, length: 2 m	R&S®PCK	0292.2013.20
19" rack adapter	R&S®ZZA-KN5	1175.3040.00
Connectors and cables		
Adapter, N (m) to 3.5 mm (f) (APC3.5-compatible)		3587.7835.00
Probe power connector, 3-pin		1065.9480.00
N-type adapter for R&S®RT-Zxx oscilloscope probes	R&S®RT-ZA9	1417.0909.02
Cable for connecting digital baseband interfaces of Rohde & Schwarz instruments (accessory for R&S®FSW-B17)	R&S®SMU-Z6	1415.0201.02
DC block		
DC block, 10 kHz to 18 GHz (N type)	R&S®FSE-Z4	1084.7443.03
Other accessories		
Low-noise active antenna system	R&S®AM524	4015.7001.02
Control unit for R&S®AM524	R&S®GS525	4035.5004.02

Warranty and service

Warranty		
Base unit		1 year
All other items		1 year
Service options		
	Service plans	**On demand**
Calibration	up to five years [22]	pay per calibration
Warranty and repair	up to five years [22]	standard price repair
Find out more about our service portfolio under: www.rohde-schwarz.com/service-support/service/overview/service-overview_229461.html		

[22] For extended periods, contact your Rohde & Schwarz sales office.

Service at Rohde&Schwarz
You're in great hands

- ► Worldwide
- ► Local and personalized
- ► Customized and flexible
- ► Uncompromising quality
- ► Long-term dependability

Rohde&Schwarz

The Rohde&Schwarz technology group is among the trailblazers when it comes to paving the way for a safer and connected world with its leading solutions in test&measurement, technology systems and networks&cybersecurity. Founded 90 years ago, the group is a reliable partner for industry and government customers around the globe. The independent company is headquartered in Munich, Germany and has an extensive sales and service network with locations in more than 70 countries.

www.rohde-schwarz.com

Sustainable product design

- ▶ Environmental compatibility and eco-footprint
- ▶ Energy efficiency and low emissions
- ▶ Longevity and optimized total cost of ownership

Certified Quality Management
ISO 9001

Certified Environmental Management
ISO 14001

Rohde&Schwarz training
www.training.rohde-schwarz.com

Rohde&Schwarz customer support
www.rohde-schwarz.com/support

PD 3607.0275.22 | Version 05.00 | February 2024 (jr)
R&S®FSWT Test Receiver

3607027522
3607.0275.22 05.00 PDP/PDW 1 en